

Amendments to the Specification:

Please replace paragraph 001 with the following amended paragraph:

[001] Reference is made to commonly assigned copending patent application Docket No. F-285-Serial No. 10/087,492 filed herewith entitled "Method For Reading Information That Has Been Embedded In An Image" in the names of Robert A. Cordery, Claude Zeller, Donald G. Mackay and William A. Brosseau; and Docket No. F-417-Serial No. 10/087,314 filed herewith entitled "Method For Utilizing A Fragile Watermark For Enhanced Security" in the names of Claude Zeller, Donald G. Mackay, William Kilmartin, William A. Brosseau, James Euchner and Robert A. Cordery (Docket No. F- 417 claims the benefit of the filing date of U.S. Provisional Application Number 60/283,565 filed April 13, 2001, which is owned by the assignee of the present Application).

Please replace paragraph 006 with the following amended paragraph:

[006] The foregoing is accomplished by converting the plurality of numbers into a two-dimensional bar code that is repeated m times in the horizontal direction and n times in the vertical direction in order to produce redundancy so that the two-dimensional bar code will be easier to recover. The two-dimensional bar codes are then filtered by a spreading algorithm that scrambles the information represented by the two-dimensional bar code. Each scrambled two-dimensional bar code will be the same size as the two-dimensional bar code that it replaces. Then each scrambled two-dimensional bar code will be split into two equal parts, i.e., a first part and a second part. Each first part and each second part will contain an upper portion and a lower portion. The upper portion of the first part and the lower portion of the second part will be the same as the respective upper and lower parts of the scrambled two-dimensional bar code. The lower portion of the first part and the upper portion of the second part will be white or empty space. Spread spectrum-like techniques will then be applied to the first part and second part to further hide the information in the first and second parts and to make it easier to recover the information in the first and second parts. Then the plurality of first and second parts will be expanded over the entire image that is going to be printed. At each location in which information from the plurality of first parts is going to be printed, the printed information will be a printed pixel of a specified dimension, i.e., 2 X 2 pixels. At each location in

which information from the plurality of second parts is going to be printed, the printed information will be a printed pixel of a specified dimension that differs from the pixels printed in the first parts, i.e., 3 X 3 pixels. The pixels of the first part and the pixels of the second part do not overlap. The plurality of first and second parts will then be printed over the image to produce an image containing hidden information that is difficult to copy. When the image and plurality of first and second parts are scanned and printed and/or photocopied, the printed pixels of specified dimensions in the first and second parts will be distorted in the bit map. In addition, the scanned pixels will not align perfectly with the printed pixels. When the scanned image is converted back to a bit map, this usually increases the percentage of black pixels. Thus, the combination of optical effects, digitations effects and ink spread increase the size of the black areas. The change in size of the printed pixels of specified dimensions in the first and second parts may be observable by the human eye and/or a scanner. Thus, one will be able to determine when an image is copied.

Please replace the abstract with the amended abstract.

ABSTRACT OF THE INVENTION

A method for producing a composite image that includes a first and second image. The second image embeds information in the first image in a manner that the second image will change in appearance when the first and second images are scanned or photocopied. A method for producing a background image representing data. The background image is created by; producing a first encoding of data into a first binary array; producing a second encoding of the data into a second binary array; representing the first binary array as a first set of modules of a first size of n x n pixels wherein each pixel is either white or black and every pixel in the module is identical to every other picture in the module on nodes of a first lattice;

representing the second binary array as a first set of modules of a second size, of m x m wherein each pixel is either white or black and every pixel in the module is identical to every other pixel in the module, which is smaller than the first size on nodes of a second lattice;

combining the first and second sets of modules; and

printing the first and second sets of modules.